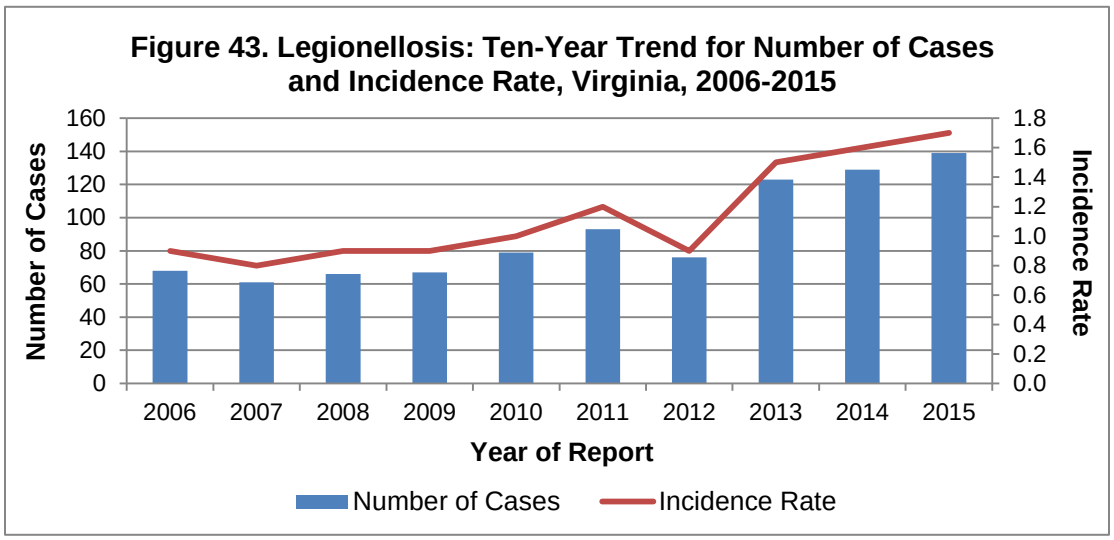
Legionellosis

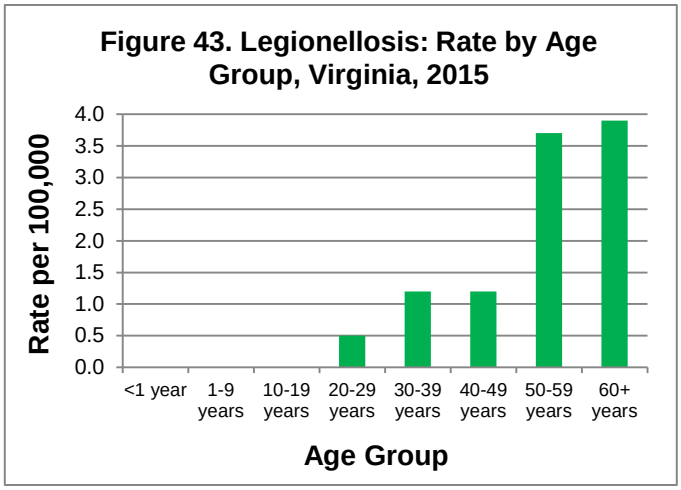
Agent: *Legionella* species (bacteria); most infections in the United States are caused by *Legionella pneumophila*
Mode of Transmission: Inhalation of contaminated aerosolized water (e.g., sprays, mists).
Signs/Symptoms: Infection with *L. pneumophila* causes two distinct illnesses: Legionnaires' disease, characterized by fever, muscle aches, headaches, malaise, cough, and pneumonia with progressive respiratory distress; or Pontiac fever, a milder influenza-like illness without pneumonia characterized by quick onset. Pontiac fever and Legionnaires' disease are referred to as "legionellosis", separately or together.
Prevention: Ensuring that water systems in buildings (i.e., hot tubs, cooling water systems, hot water tanks, decorative fountains) are maintained properly in order to reduce the growth and spread of *Legionella*. For outbreaks, control measures include disinfection of contaminated water sources by chlorination or superheating of water from 160° to 170°F, and appropriate mechanical cleaning.
Other Important Information: Legionellosis is more common among people who are elderly, are immunocompromised, or have underlying lung disease. Virginia has experienced a pattern, also seen nationally, in which there was an increase in legionellosis cases in 2003, followed by a higher incidence in the post-2003 period than in the pre-2003 period. The cause of this increase is not clearly understood. Factors that may have contributed to the higher number of cases in 2003 and later include an increasing population of older persons and persons at high risk for infection, as well as improved diagnosis and reporting of the condition. Additional factors may include CDC's call for more active and timely surveillance of travel-associated legionellosis and changing weather patterns.

Legionellosis: 2015 Data Summary	
Number of Cases:	139
5-Year Average Number of Cases:	100.0
% Change from 5-Year Average:	+39%
Incidence Rate per 100,000:	1.7

In 2015, 139 cases of legionellosis were reported in Virginia, which is the highest number of cases reported in the state during a reporting year. This represents an 8% increase from the 129 cases reported in 2014, and a 39% increase from the five-year average of 100.0 cases per year (Figure 42). Generally, there has been an increasing trend of reported cases over the last decade. National data from the CDC indicate that several other states in the U.S. have seen a similar increase in legionellosis cases, especially in the mid-Atlantic region. One reason for this rise in incidence could be the unusually warm and humid weather experienced during the summer by many states throughout the country, as there is some evidence that legionellosis incidence may be influenced by certain weather conditions.



Legionellosis incidence rates were closely associated with age. In 2015, the highest incidence occurred in the 60 year and older age group (3.9 per 100,000), followed by the 50-59 year age group (3.7 per 100,000) (Figure 43). Of the 139 cases reported in 2015, 106 (76%) were reported among persons age 50 years or older. No cases of legionellosis were reported in persons younger than 20 years. Race was reported for 91% of cases. Among those with a known race, incidence was higher in the black population (2.7 per 100,000) when compared to the white and "other" race populations (1.3 and 0.3 per 100,000, respectively). Additionally, the incidence rate among males was more than twice the rate among females (2.3 and 1.1 per 100,000, respectively).



Incidence rates were highest in the southwest region (2.3 per 100,000), followed closely by the eastern region (2.2 per 100,000). Incidence rates ranged from 1.2 to 1.7 per 100,000 among the remaining regions. Geographically, cases were dispersed among localities throughout Virginia (refer to map below). While cases occurred throughout the year, seasonality was apparent with 35% of cases occurring in the third quarter of the year.

Information on overnight travel was obtained for 124 (89%) cases reported in 2015. Of those, 25 (20%) reported spending at least one night away from home in the 10 days prior to symptom onset, including 10 who reported staying in a hotel. Information on exposure to a healthcare setting was obtained for 121 (87%) cases. Of those, 23 (19%) reported spending time in a healthcare setting in the 10 days prior to symptom onset. Healthcare settings include hospitals, long-term care facilities, clinics, or other healthcare settings. Individuals with possible exposure include inpatients, outpatients, visitors, volunteers, or employees of a healthcare setting. Among those reporting a healthcare exposure, 20 (87%) were considered possible exposures, defined as healthcare exposure for only a portion of the 10 days prior to

symptoms, and 3 (13%) were definite exposures, defined as being an inpatient (hospital or long-term care facility) during the entire 10 days prior to symptom onset. All three definite healthcare exposure cases occurred in residents at three different long-term care facilities.

Eight deaths (6%) were attributed to legionellosis in 2015. The deaths occurred in five females and three males and ranged in age from 39 to 92 years. Three deaths each occurred in the central and southwest regions, while one death each occurred in the northern and northwest regions.